

## **Friday Flyer – November 9, 2012**

Something to share—an interesting research project or kudos for a student, teacher or mentor?  
Contact Kris Whelan.

## **CENTER SPOTLIGHT: University of Houston/Rice University -**

<http://outreach.phys.uh.edu/quarknet.htm>

Contact Marj Corcoran ([corcoran@physics.rice.edu](mailto:corcoran@physics.rice.edu)) or Robert Dubois ([rdubois@uh.edu](mailto:rdubois@uh.edu)) to learn how to manage multiple research experiences for students and teachers.

The UH/Rice QuarkNet Center has a very active yearlong program. During the academic year 2011-2012, they sponsored three “Saturday Physics” events. Topics included discussions of the Standard Model, a history of superconductivity and an update on neutrino research. On average, 200 students along with their teachers attended each event. In March 2012, this center participated in the CMS masterclass held on the University of Houston campus for 30 students and 2 teachers.

In addition, the UH/Rice center hosted eight students for six-week research experiences. Students worked alongside physicists and studied quantum mechanics; determining the yield of silver sputtering by argon cluster ion beams; preparing “high temperature” superconducting materials and analyzing them by SEM and X-ray diffraction; using MATLAB in imaging physics; constructing and analyzing electrical networks that can mimic gene systems and even ecosystems and gravitational systems and solar cell developments.

In June, the group held a workshop for 23 high school teachers on the Rice campus including several teachers new to the program. The emphasis was on the cosmic ray detectors. Two new detectors were assembled and, along with two other detectors, were successfully plateaued. Teachers attended several talks including an introduction to the Standard Model and a talk from former Rice graduate student Dennis Mackin about proton beams for cancer therapy. Dennis also arranged a tour of Houston’s Proton Therapy Center for some of the teachers. Frank Toffolletto treated the teachers to a talk about the physics of music. On Friday morning the teachers shared teaching techniques and tips in a very lively discussion, which included musical performances by some of the teachers.

## **Resource of the Week - Bubble Chamber Activity**

<http://teachers.web.cern.ch/teachers/archiv/HST2000/teaching/resource/bubble/bubble.htm>

Developed by teachers (including a QuarkNet teacher!) attending CERN’s High School Teacher program, this site also includes links to additional teacher-created particle physics resources.

## **Physics Experiment Roundup - Voyage to SNOLAB**

<http://www.symmetrymagazine.org/article/november-2012/voyage-to-snolab>

A growing number of scientists are looking for ways to join a dream team of experiments in a unique laboratory a mile and a half underground in Ontario. There, they seek to solve some of the biggest mysteries in physics today, including the case of missing dark matter. (from *symmetry*, November 2012)

## **Just for Fun - Sknowflake App for iPhone**

[http://www.sknowflake.com/products/physics\\_101/](http://www.sknowflake.com/products/physics_101/)

All the content of a typical first-semester physics class put into a convenient package. Currently available on iTunes for free.

## **LHSee App for Android**

<http://www2.physics.ox.ac.uk/about-us/outreach/public/lhsee>

LHSee is an App written to allow you to see collisions from the Large Hadron Collider. This free App will run on mobile phones and tablet PCs that run the Google Android© operating system. It was updated in July to include the Higgs candidate event. (University of Oxford, Department of Physics)

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